

Proposed Project

Upper Little Patuxent Watershed

Project Number: BF21

Subwatershed: Plumtree Branch 1

Project Type: Riparian Buffer
Replacement

Project Size: Approx. 375 feet in length /
1.56 acres

Project Location: Between Plum Spring Lane
and Spring Meadow Drive.

Project Description: The buffer along both sides of the stream in this area has been greatly reduced or is absent. The project would entail planting of native trees and shrubs to widen the existing buffer. Homeowner education and cooperation would be necessary to ensure success of plantings.

Use of volunteer assistance for site preparation, planting and necessary maintenance and monitoring of the site could help reduce overall project cost.



Project Benefits:

Stabilization	Additional trees and shrubs will help stabilize the stream bank.
Habitat	Planting here will provide some habitat improvement but is limited by the proximity of the houses and roadway.
Water Quality	A more established buffer will provide shading effects to reduce water temperature and will trap runoff and pollutants such as fertilizers from the adjacent properties.

Project Constraints:

Environmental	No environmental/permitting constraints are present.
Property Ownership	This project is on private property.
Facility Access	Access to this site is obtained by way of an easement on Spring Meadow Drive.
Design / Construction	No design constraints were recognized.

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Cost Detail:

Riparian Buffer Replacement

Plant Material (trees)	1.56	AC	\$3,750.00	\$5,860	\$5,860
Plant Material (shrubs)	1.56	AC	\$2,725.00	\$4,258	\$4,258
Mulch, Tree Shelter	1,064	PLANTS	\$6.00	\$6,381	\$6,381
Cost to Plant	1,064	PLANTS	\$6.00	\$0	\$6,381
Site Preparation (volunteer)		AC	\$0.00	\$0	\$0
Basic Site Maintenance and Monitoring (volunteer)		AC	\$0.00	\$0	\$0
Direct Construction Subtotal				\$16,499	\$22,881
Base Construction Cost				\$16,499	\$22,881
Mobilization (10% of Directs or \$1,000)				\$0	\$0
Subtotal				\$16,499	\$22,881
Contingency (30%)				\$4,950	\$6,864
Construction Subtotal				\$21,449	\$29,745
Env't'l Studies / Permitting (5% of Construction or \$1,000)				\$0	\$0
Landscape Design and Surveys (25% of Construction or \$5,000)				\$0	\$0
Total Capital Cost				\$21,449	\$29,745
Operations and Maintenance Costs					
Annual Maintenance	5	Percent		\$825	\$1,144
Discount Rate	5	Percent			
Expected Life	5	Years			
Net Present Value of Annual Costs				\$3,572	\$4,953
Life Cycle Cost				\$25,100	\$34,700

Cost Notes and Assumptions:

Project costs were derived for both volunteer and paid labor. In calculating costs for volunteer labor it is assumed that local volunteer organizations could accomplish the project with County assistance and oversight. Site preparation, planting and any necessary maintenance and monitoring would be conducted by volunteers.

Planting density is planned at 1 tree or shrub planted at 8 foot intervals for a total of 681 plants per acre.

Size and species of trees and shrub plant material is based on approved Howard County Recreation and Parks information and is typically a 3-4 foot plant. Use of more mature or more immature plant material would affect the planting density and cost per plant.

Cost of plant material is based on 2009 survey of local and regional wholesale native plant nurseries. Plant material (seedlings) may also be obtained from the Maryland Department of Natural Resources, State Forest Tree Nursery at a much reduced cost or through Howard County's Stream ReLeaf program at no cost.